

(19) World Intellectual Property Organization  
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(51) International Patent Classification<sup>7</sup>: B26B 29/02, 5/00

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(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
9909317.1 23 April 1999 (23.04.1999) GB

(71) Applicant (for all designated States except US): MOVING EDGE LIMITED [GB/GB]; Challenge House, 52-54 Holton Road, Barry, Vale of Glamorgan CF63 4HE (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): JOHN, Roger, Bernard [GB/GB]; 57 Pentwyn, Castleview, Radyr, Cardiff CF4 8RE (GB).

(74) Agent: GIBSON, Stewart, Harry; Urquhart-Dykes & Lord, Three Trinity Court, 21-27 Newport Road, Cardiff CF24 0AA (GB).

(81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

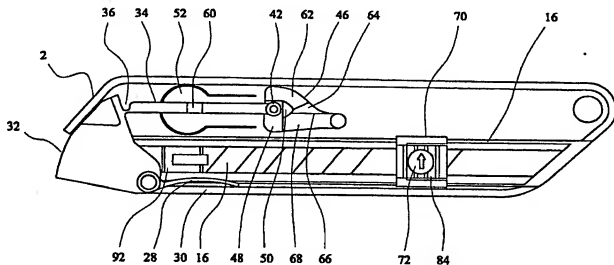
Published:

— With international search report.

(88) Date of publication of the international search report:  
8 March 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CUTTING TOOL



(57) Abstract: A cutting tool having a blade (16) and a member (24) which is biased towards a safety position in which the member forms a guard for the blade, but which may be displaced to expose the blade by bringing the tool into cutting contact with a workpiece. The cutting tool comprises a locking mechanism which has a trigger (52, 54) which must be moved from a first position to a second position to release the guard member (24) from its safety position and which is arranged such that each time the guard member is released from its safety position, is displaced through a predetermined distance, and then returns to its safety position, the guard member will become locked in place regardless of the position of the trigger.

WO 00/64646 A3

## INTERNATIONAL SEARCH REPORT

In tional Application No

PCT/GB 00/01493

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B26B29/02 B26B5/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B26B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 89 12 929 U (KAHL) 28 December 1989 (1989-12-28) page 3, paragraph 2 -page 5, paragraph 1; figures 1-3 ---	1,2
X,P	EP 0 963 819 A (BEERMANN KG MARTOR ARGENTAX) 15 December 1999 (1999-12-15) column 2, line 35 - line 47 column 6, line 19 - line 30 column 8, line 12 -column 9, line 16; figures 7-10 ---	1
A	FR 2 572 984 A (PREPOSREVE) 16 May 1986 (1986-05-16) page 3, line 16 -page 5, line 9; figures 1,2 --- -/-	1

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

8 August 2000

Date of mailing of the international search report

08. 12. 2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2

NL - 2280 HV Rijswijk

Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,

Fax: (+31-70) 340-3016

Authorized officer

HERYGERS, J

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 00/01493

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DE 26 23 490 A (BEERMANN KG MARTOR ARGENTAX) 1 December 1977 (1977-12-01) page 15, paragraph 2 -page 18, paragraph 1; figures 1-3</p> <p>-----</p>	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 00/01493

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

## 1. Claims: 1-9

Cutting tool with locking mechanism for a guard

## 2. Claims: 10-22

Cutting tool with successive blade sections

## 3. Claims: 23-25

Cutting tool with locking means for a replaceable blade cartridge.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/01493

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 8912929	U	28-12-1989	NONE	
EP 0963819	A	15-12-1999	DE 19923179 A	23-12-1999
			DE 19923181 A	23-12-1999
			DE 29908856 U	26-08-1999
			DE 29908858 U	12-08-1999
			EP 0963820 A	15-12-1999
FR 2572984	A	16-05-1986	DE 3540026 A	15-05-1986
DE 2623490	A	01-12-1977	NONE	

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>MS/P75377W0</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/ 01493</b>	International filing date (day/month/year) <b>17/04/2000</b>	(Earliest) Priority Date (day/month/year) <b>23/04/1999</b>
Applicant <b>MOVING EDGE LIMITED</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

3  
☐ None of the figures.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 00/01493

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.



## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

## 1. Claims: 1-9

Cutting tool with locking mechanism for a guard

## 2. Claims: 10-22

Cutting tool with successive blade sections

## 3. Claims: 23-25

Cuting tool with locking means for a replaceable blade cartridge.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 00/01493

## Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The abstract is modified as follows :

Line 1	:	after	"blade"	insert	"(16)"	;
line 1	:	after	"member"	insert	"(24)"	;
line 5	:	after	"trigger"	insert	"(52,54)"	;
line 7	:	after	"guard member"	insert	"(24)"	.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/01493

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B26B29/02 B26B5/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B26B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 89 12 929 U (KAHL) 28 December 1989 (1989-12-28) page 3, paragraph 2 -page 5, paragraph 1; figures 1-3	1,2
X,P	--- EP 0 963 819 A (BEERMANN KG MARTOR ARGENTAX) 15 December 1999 (1999-12-15) column 2, line 35 - line 47 column 6, line 19 - line 30 column 8, line 12 -column 9, line 16; figures 7-10	1
A	--- FR 2 572 984 A (PREPOSREVE) 16 May 1986 (1986-05-16) page 3, line 16 -page 5, line 9; figures 1,2	1
	--- -/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance  
"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

8 August 2000

Date of mailing of the international search report

08. 12. 2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel: (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

HERYGER, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/01493

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 26 23 490 A (BEERMANN KG MARTOR ARGENTAX) 1 December 1977 (1977-12-01) page 15, paragraph 2 -page 18, paragraph 1; figures 1-3  -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/01493

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
✓ DE 8912929	U	28-12-1989	NONE	
✓ EP 0963819	A	15-12-1999		
			DE 19923179 A	23-12-1999
			DE 19923181 A	23-12-1999
			DE 29908856 U	26-08-1999
			DE 29908858 U	12-08-1999
			EP 0963820 A	15-12-1999
FR 2572984	A	16-05-1986	DE 3540026 A	15-05-1986
✓ DE 2623490	A	01-12-1977	NONE	


PCT

REC'D 03 JUL 2001

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference MS/P75377WO		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)
International application No. PCT/GB00/01493	International filing date (day/month/year) 17/04/2000	Priority date (day/month/year) 23/04/1999	
International Patent Classification (IPC) or national classification and IPC B26B29/02			
Applicant MOVING EDGE LIMITED et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input checked="" type="checkbox"/> Certain documents cited</p> <p>VII <input checked="" type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  05/10/2000		Date of completion of this report  29.06.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80296 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer  Canelas, R.F.  Telephone No. +49 89 2399 2367	



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/01493

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-13 as originally filed

**Claims, No.:**

1-25 as originally filed

**Drawings, sheets:**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/01493

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 10-25.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)

Yes: Claims 3-7,9



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/01493

	No:	Claims	1,2,8
Inventive step (IS)	Yes:	Claims	3-7
	No:	Claims	1,2,8,9
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**VI. Certain documents cited**

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/01493

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Document DE-U-8912929 [D1] discloses

A cutting tool having a blade (12) and a member (14) which is biased towards a safety position in which the member forms a guard for the blade, but which may be displaced to expose the blade by bringing the tool into contact with a workpiece, and a locking mechanism having a trigger (20) which must be moved from a first position to a second position to release the guard member from its safety position and arranged such that each time the guard member is released from its safety position, is displaced through a predetermined distance, and then returns to its safety position, the guard member will become locked in place regardless of the position of the trigger.

The subject-matter of claim 1 is therefore not new (Art 33(2) PCT).

The subject-matter of claims 2 and 8 is also anticipated by D1; the subject-matter of claim 9 only adds an obvious option common in the field, thus not involving an inventive step (Art 33(3) PCT).

The subject-matter of claims 3-7 is new and involves an inventive step as it proposes a non-obvious type of mechanism to execute the function of the guard member.

The subject-matter of claims 1-9 is industrially applicable.

**Re Item VI**

**Certain documents cited**

Certain published documents (Rule 70.10)

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
EP-A- 0 963 819	15.12.1999	21.05.1999	11.06.1998

Discloses all the features of claims 1 and 8, although it does not constitute prior art in

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB00/01493

the meaning of R.64.1 PCT.

**Re Item VII**

**Certain defects in the international application**

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : <b>B26B 29/02, 5/00</b>	<b>A2</b>	(11) International Publication Number: <b>WO 00/64646</b> (43) International Publication Date: 2 November 2000 (02.11.00)
-------------------------------------------------------------------------	-----------	------------------------------------------------------------------------------------------------------------------------------

(21) International Application Number: PCT/GB00/01493

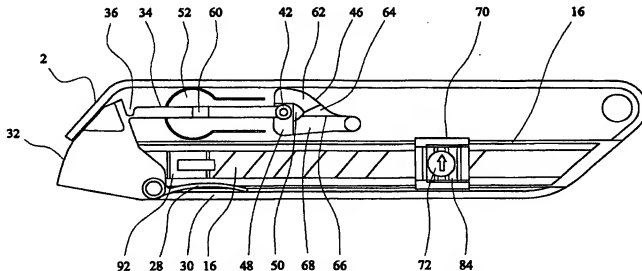
(22) International Filing Date: 17 April 2000 (17.04.00)

(30) Priority Data:  
9909317.1 23 April 1999 (23.04.99) GB(71) Applicant (for all designated States except US): MOVING  
EDGE LIMITED [GB/GB]; Challenge House, 52-54 Holton  
Road, Barry, Vale of Glamorgan CF63 4HE (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): JOHN, Roger, Bernard  
[GB/GB]; 57 Pentwyn, Castleview, Radyr, Cardiff CF4 8RE  
(GB).(74) Agent: GIBSON, Stewart, Harry; Urquhart-Dykes & Lord,  
Three Trinity Court, 21-27 Newport Road, Cardiff CF24  
0AA (GB).(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG,  
BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE,  
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,  
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE,  
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(54) Title: CUTTING TOOL

**(57) Abstract**

A cutting tool having a blade and a member which is biased towards a safety position in which the member forms a guard for the blade, but which may be displaced to expose the blade by bringing the tool into cutting contact with a workpiece. The cutting tool comprises a locking mechanism which has a trigger which must be moved from a first position to a second position to release the guard member from its safety position and which is arranged such that each time the guard member is released from its safety position, is displaced through a predetermined distance, and then returns to its safety position, the guard member will become locked in place regardless of the position of the trigger.

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### Cutting Tool

The present invention relates to a cutting tool.

The majority of existing cutting tools comprise an elongate handle and a blade portion having a cutting edge extending axially from the handle.

5           When using such a tool to perform a cutting operation, it is usual for a person to grip the handle of the tool and to draw the blade of the tool towards himself or sideways through a workpiece.

          However, as the blade of the tool is released from the  
10 workpiece at the end of a cut, the person holding the tool often finds it difficult to maintain control of the tool, thus creating a serious safety hazard both to himself and to those around him.

          An arrangement has been proposed wherein a tool is  
15 provided with a member which is biased towards a safety position in which the member forms a guard for the blade of the tool, but which may be displaced to expose the blade by bringing the tool into cutting contact with a workpiece. The tool is further provided with a latch which must be released  
20 by depressing a trigger to allow the guard member to be displaced. Thus, inadvertent exposure of the blade is prevented.

          However, in order to overcome the safety hazard described above, the trigger must be released before the end  
25 of a cut to allow the latch to re-engage the guard member as soon as the tool is released from a workpiece: we have found that there is a tendency for persons using such tools not to release the trigger in sufficient time to prevent accidental cuts from occurring.

30           We have now devised an arrangement which overcomes the above-mentioned limitations of existing cutting tools.

According to a first aspect of the present invention, there is provided a cutting tool having a blade and a member which is biased towards a safety position in which the member forms a guard for the blade, but which may be displaced to  
5 expose the blade by bringing the tool into cutting contact with a workpiece, and a locking mechanism having a trigger which must be moved from a first position to a second position to release the guard member from its safety position and arranged such that each time the guard member is released from its  
10 safety position, is displaced through a predetermined distance, and then returns to its safety position, the guard member will become locked in place regardless of the position of the trigger.

Thus, as the blade of the tool is released from a  
15 workpiece at the end of a cut, the guard member is re-deployed and locked in place without the operator having to release the trigger.

Preferably the guard member is pivotally mounted to the tool.

20 Preferably the locking action of the cutting tool is provided by a strut which is pivotally joined to the guard member, the distal end of the strut being arranged to follow a loop. Most preferably the strut is arranged to pivot in a vertical plane.

25 Preferably a lug at the distal end of the strut slidably locates within a looped recess. Preferably the recess comprises a guide-channel which extends substantially perpendicularly to the axis of the longitudinal axis of the strut and within which the lug prevents substantial axial  
30 movement of the strut. Preferably as the trigger is displaced from said first position to said second position, the strut is displaced such that lug slides out of one end of the channel.

Preferably the locking mechanism is arranged such that

the guard member cannot be released from said safety position unless the tool is in contact with the workpiece.

Preferably the blade is provided in a replaceable cartridge.

5 Cutting tools are also known in which a blade is mounted to a sliding blade-carriage for advancing and retracting the blade in predetermined increments. For example, it is known to form a blade with a number of lines of weakness defining successive blade sections which may be detached, one  
10 at a time, from the end of the blade to maintain a sharp edge to the blade. The blade-carriage may therefore be arranged to be advanced in increments equal to the width of each blade segment.

However, in many circumstances, it would be desirable  
15 for the blade to be advanced both in predetermined increments, for example as successive sections of the blade are detached, but also for the position of blade to be adjusted by a much finer degree, to control the depth of cut.

We have now devised an arrangement which provides both  
20 coarse and fine adjustment of the blade position.

According to a second aspect of the present invention, there is provided a cutting tool having a blade and a sliding blade-carriage formed with an elongate projection which extends substantially perpendicularly through a slot formed in the  
25 blade, the projection being rotatable about an axis parallel to its longitudinal axis and the slot being of substantially the same diameter as the projection and extending substantially perpendicularly to the axis of movement of the carriage, so that as the projection is rotated, the blade is correspondingly  
30 advanced or withdrawn relative to the carriage.

Thus the carriage may be slid to-and-fro to provide coarse adjustment of the blade position and the elongate projection may be rotated to provide fine adjustment of the blade position.



Preferably the blade is provided in a replaceable cartridge to which the blade-carrier is preferably mounted.

As mentioned above, it is known to provide a cutting tool with a blade formed with a number of lines of weakness  
5 defining successive blade sections.

However, in order to detach successive blade sections from the end of the blade it is typically necessary to press the end of the blade sideways against a hard surface to snap the blade along a line of weakness. The blade must therefore  
10 be exposed as the end section is detached and, should the cutting tool slip, injury may result. There is also the possibility that the detached blade portion may contaminate a product or cause injury as it is disposed of.

We have now devised an arrangement which overcomes  
15 these limitations of existing cutting tools.

According to a third aspect of the present invention, there is provided a cutting tool having a passageway for receiving a elongate blade formed with one or more lines of weakness defining successive blade sections, a portion of the  
20 tool being displaceable to detach a distal section of the blade from the remainder of the blade such that the detached blade section is retained within a containment region of the tool.

Preferably the displaceable portion comprises a portion of the passageway formed by opposed first and second walls  
25 pivotally mounted such that they may be displaced to one side of the passageway to allow an end section of the blade to be introduced into the gap thus formed, and then brought back into line with the passageway to detach the end section from the remainder of the blade.

30 Preferably the portion of the passageway formed by the first and second walls is arranged to pivot away from the passageway about the forward edge of the portion.

Preferably, the detached end section of the blade is pressed through an opening into the containment region.

Preferably the passageway is provided in a replaceable blade-cartridge, which may also provide the containment region for receiving detached blade sections.

Preferably the tool or, where the tool comprises a replaceable blade-cartridge, the blade-cartridge, is formed from a blank comprising three collinear elongate portions arranged to be folded together along their adjoining edges such that the passageway for receiving an elongate blade is formed between the opposed faces of two adjacent portions of the blank, and the containment region is formed between the opposed faces of one of the two adjacent portions and a face of the remaining portion.

Preferably the blank is arranged for two adjacent portions of the blank to be folded together, to form the passageway between their opposed faces, and for the portions on opposite sides of the blank to then be folded together, to form the containment region between their opposed faces.

Preferably the blank is formed from a plastics material having fold lines formed by compressed regions of the blank.

Preferably the opposed faces of the two portions which form the containment region are each formed with a plurality of projections for inhibiting movement of detached blade sections within the containment region.

It is known to provide a cutting tool with a replaceable cartridge from which a blade may be extended and retracted. However, such cartridges present a serious safety hazard where it is possible for the blade of the cartridge to be exposed when the cartridge is outside of the tool.

We have now devised an arrangement which overcomes this problem.

According to a fourth aspect of the present invention, there is provided a cutting tool comprising a replaceable blade-cartridge within which a blade is carried such that the blade may be slid from an exposed position to a retracted

position and comprising means for preventing the cartridge from being removed from the tool whilst the blade is in its exposed position and means which lock the blade in its retracted position as the cartridge is removed from the tool.

5 Preferably the tool comprises a blade-carrier and the means for preventing the cartridge from being removed from the tool whilst the blade is in its exposed position comprises a pivoting catch having a first portion which engages a part of the tool body when the blade is in its exposed position, and  
10 a second portion which is displaced by the blade-carrier when the blade is in its retracted position to disengage the first portion from said part of the tool body.

Preferably the tool comprises a blade-carrier and the means which lock the blade in its retracted position as the  
15 cartridge is removed from the tool comprises a pivoting catch having a first portion which engages the blade-carrier when the blade is in its retracted position and the cartridge is outside of the tool, and a second portion which is displaced by a part of the tool body when the blade is inserted into the tool to  
20 disengage the first portion from the blade-carrier.

The arrangement thus significantly reduces the risk of the blade being exposed when the cartridge is outside of the tool.

Embodiments of the present invention will now be  
25 described by way of examples only and with reference to the accompanying drawings, in which:

Figure 1 is a exploded view of the various parts which form a cutting tool in accordance with the present invention;

Figure 2 is a view of a partially assembled cutting  
30 tool;

Figure 3 is a side elevation of a partially assembled cutting tool;

Figure 4 is a view of a blade-cartridge in accordance with the present invention;

Figure 5 is a series of sectional plan views showing the sequence of operations for detaching a blade section; and

Figures 6 to 9 are respectively a top plan view, a side view, a bottom plan view and a perspective view of a blank from which a blade cartridge is formed; and

Figure 10 is a perspective view of a recessed portion of a tool in accordance with the present invention.

Referring to Figures 1 to 3 of the drawings, a cutting tool is shown to comprise a pair of opposed cover plates 2,4, which when brought together provide a handle for the device.

Projections 6,8 formed on the inner surface of each of the cover plates 2,4 provide a passageway 10 which extends longitudinally through the handle for receiving a replaceable blade-cartridge 12, which may be slid into the passageway 10 via an opening 14 formed between the cover plates 2,4 at the rear of the handle.

A blade 16 is contained within the cartridge 12 in a passageway 18 which is closed at its rear end but is formed with an opening 20 at its forward end, through which a limited portion of the blade 16 may be extended, so that, when the cartridge 12 is inserted into the handle, the extended portion will project through an opening 22 at the forward end of the handle.

A guard member 24 is arranged to be pivotally mounted at the forward end of the handle to conceal the extended blade portion of a cartridge 12 inserted into the handle.

The guard member 24 may be spring biased or, as shown in the drawings, may be formed with a pair of resilient arms 26,28 which, in the assembled device, extend rearwardly into the handle and bear upon the base wall 30 of the handle to bias the guard member 24 such that a portion 32 of the guard member normally projects through the opening 22 at the forward end of the handle, but may be displaced into the handle by pressing the guard member 24 against a workpiece.

A strut 34 is pivotally joined by a thin membrane 36 or may be hinged to the top of the guard member 24 and is bifurcated to provide a pair of resilient arms 38,40, each of which is formed at its distal end with a respective lug 42,44.

5 The lugs 42,44 are positioned to locate within respective profiled recesses 46 formed in the inner surfaces of the opposed cover plates 2,4.

A guide-channel 48 at the forward end of each profiled recess 46 decreases in depth both upwardly and downwardly away  
10 from its midpoint, thereby forming a trough into which a lug 42,44 is normally biased by its respective arm 38,40. In this position, a buttress 50, to the rear of each lug 42,44, prevents the projecting portion 32 of the guard member 24 from being displaced into the handle.

15 A pair of triggers for releasing the guard member are provided in the form of respective tongues 52,54 formed in the two cover plates 2,4. By providing triggers on the opposite sides of the handle, the tool may be operated by either left or right-handed persons.

20 Each tongue 52,54 is formed on its inner surface with a projection 56, which aligns with a corresponding tapered projection 58,60 formed on a respective side of the strut 34. Thus, by pressing upon either of the tongues 52,54, the strut 34 may be deflected upwards to release the guard member 24.

25 With the lugs 42,44 clear of their respective buttresses 50 the projecting portion 32 of the guard member 24 may be displaced into the handle by pressing the guard member 24 against a workpiece.

By displacing the projecting portion 32 of the guard  
30 member 24 into the handle, the lugs 42,44 are driven backwards along upper guide-channels 62 of their respective recesses 46. The depth of each recess 46 increases towards the rear of its upper guide-channel 62, across a region 64. An abrupt increase in the depth of each recess 46 at the lower edge 66 of the

region 64 defines a lower guide-channel 68 into which the lugs 42,44 are driven by the recoil action of the resilient arms 38,40.

The abrupt increase in the depth of each recess 46 between its upper and lower guide-channels 62,68 ensures one-way travel of the lugs 42,44 around the circuits formed by their respective guide-channels 48,62,68.

As the guard member 24 is released from the workpiece and pivots forwards under the recoil action of the arms 26,28, the lugs 42,44 are drawn forwards along the lower guide-channels 68 of their respective recesses 46. A gradual decrease, followed by an abrupt increase in the depth of each recess 46, towards the forward end of its lower guide-channel 68, ensures that, when the guard member 24 is fully re-deployed, the lugs 42,44 are prevented from returning along the lower guide-channels 68 of their respective recesses 46. The guard member 24 is thus locked in place regardless of whether pressure on the tongues 52,54 has been released.

If pressure is maintained on one or both of the tongues 52,54, whilst the tool is removed from a workpiece, then as that pressure is released, the lugs 42,44 slide upwards into the troughs formed in the guide-channels 48 at the forward ends of their respective recesses 46, under the recoil action of the resilient arms 38,40.

Alternatively, the projections 56 formed on the inner surfaces of the tongues 42,54 and the tapered projections 58,60 of the strut 34 may be arranged such that by pressing upon either of the tongues 52,54, the strut will be deflected downwards (rather than upwards) out of the trough in its respective forward recess 48, to release the guard member 24.

In this embodiment, each recess 46 is profiled as shown in Figure 10 such that by subsequently displacing the projecting portion 32 of the guard member 24 into the handle, by pressing the tool against a workpiece, the lugs 42,44 are

driven backwards along the lower guide-channels 68 of their respective recesses 46.

Each of the lower guide-channels 68 decreases in depth towards the rear of its respective recess 46, with an abrupt  
5 increase 69 in the depth at the rear of each channel 68 forcing the lugs 42,44 to follow the upper guide-channels 62 of their respective recesses 46 when the tool is released from the surface of a workpiece. The upper guide-channels 62 decrease in depth towards the front of their respective recesses 46,  
10 with an abrupt increase 71 in depth at the front of each channel 62 preventing the lugs 42,44 from entering the upper guide-channels 62 when the guard member is fully deployed.

A carriage 70 is mounted to one side of the cartridge 12 by means of a retaining portion (not shown) which locates  
15 within the passageway 18. The carriage 70 is provided with a rotatable cylindrical core 72 from which an eccentric axial projection 74 extends across the passageway 18 and though a slot 76 formed in the blade 16. The slot 76 is of substantially the same diameter as the axial projection 74 and extends  
20 substantially perpendicularly to the axis of movement of the blade 16, so that as the cylindrical core 72 of the carriage 70 is rotated, the blade 16 is correspondingly advanced or withdrawn by a small distance relative to the carriage 70.

The carriage 70 comprises a resilient portion 78 which,  
25 when the cartridge 12 is inserted into the handle, biases a catch 80 into engagement with a corresponding pawl 82 formed in the inner surface of the cover plate 4. A button 84 extends through an elongate slot 86 formed along one side of the cover plate 4 to allow the carriage 70 to be slid backwards and  
30 forwards along the cartridge 12 to move the blade 16.

The catch 80 and the opposed indentations which form the pawl 82 are shaped to provide a ratchet action which requires the button 84 to be pressed inwards to allow the blade 16 to be withdrawn into the cartridge 12.

The blade 12 is formed with a number of lines of weakness 88 which define successive blade sections 90, and the cartridge 12 of the present invention provides a convenient means for detaching a blunted section from the forward end of  
5 the blade 16 to expose a fresh blade section.

As shown in Figure 4, with the cartridge 12 removed from the handle and with the blade 16 withdrawn, a portion 92 of the passageway 18 formed by opposed walls 94 and 96 may be pivoted outwards from the cartridge 12 to provide a gap 98. The  
10 displacement of the wall 94 also forms an opening 100 leading to a containment region 102 in the rear of the cartridge 12.

By advancing the blade 16 into the gap 98, as shown in Figure 5a, so that its end section 104 overlies the opening 100 and then pressing the displaced portion 92 of the cartridge 12  
15 back into its normal position, as shown in Figures 5b and 5c, the end section 104 is detached from the remainder of the blade by the wall 94, with the spent section 104 being pressed through the opening 100 and into the containment region 102. The remainder of the blade 16 may then be re-introduced between  
20 the walls 94 and 96, as shown in Figure 5d.

Barbs 106 formed on the interior wall of the containment region 102 serve to hold spent blade sections away from the opening 100.

The cartridge 12 is further provided with a pair of  
25 pivoting safety catches 108,110. The rearmost catch 110 comprises a downwardly projecting portion 112, which is deflected upwards by the retaining portion of the carriage 70, when the carriage 70 is fully retracted, to retract an upwardly projecting portion 114 of the catch. A recess 116 is formed in  
30 the cover plate 4 into which the upwardly projecting portion 114 may extend, when the cartridge 12 is inserted into the handle and the carriage 70 is slid forwards, so that there is no possibility of the cartridge 12 being removed from the handle whilst the blade 16 is exposed.



The foremost catch 108 comprises a downwardly projecting portion 118 which, when the cartridge 12 is removed from the handle acts as a stop against which the retaining portion of the carriage 70 abuts, to prevent the carriage 70  
5 from sliding forwards to expose the blade 16. The catch 108 also comprises and an upwardly projecting portion 120 which, when the cartridge 12 is inserted into the handle, is depressed by a corresponding projection 122 formed in the cover plate 4, thereby raising the downwardly projecting portion 118 of the  
10 catch to allow the carriage 70 to slide along the cartridge 12.

The cartridge 12 is formed from a blank 124 comprising a single piece of injection-moulded plastics material as shown in Figures 6 to 9. The blank comprises three collinear portions 126, 128, 130 and is formed into a cartridge by first folding  
15 faces 132 and 134 of portions 126 and 128 towards one another, to form a passageway therebetween for receiving a blade, and then folding face 136 of portion 130 towards face 138 of portion 126, to form a containment region therebetween for receiving detached blade sections through an aperture formed  
20 between the passageway and the containment region by a gap 98 in portion 126.

To allow the portions 126, 128 and 130 to be readily folded together, a pair of fold-lines 138, 140 are preferably pre-formed along the adjoining edges of the portions by  
25 compressing those regions of the blank between respective rollers.

When the blank is folded as described above, a plurality of rearwardly inclined projections 142 formed on face 136 of portion 126 and the opposed face 136 of portion 130  
30 prevent detached blade portions, having already fallen away from the aperture formed by gap 98, from returning towards the aperture.

The cutting tool thus described comprises a number of features which make it significantly safer to use than existing

tools.

## Claims.

- 1) A cutting tool having a blade and a member which is biased towards a safety position in which the member forms a guard for the blade, but which may be displaced to expose the blade by bringing the tool into cutting contact with a workpiece, and a locking mechanism having a trigger which must be moved from a first position to a second position to release the guard member from its safety position and arranged such that each time the guard member is released from its safety position, is displaced through a predetermined distance, and then returns to its safety position, the guard member will become locked in place regardless of the position of the trigger.
- 2) A cutting tool as claimed in Claim 1, wherein the guard member is pivotally mounted to the tool.
- 3) A cutting tool as claimed in Claim 1 or Claim 2, wherein the locking action of the cutting tool is provided by a strut which is pivotally joined to the guard member, the distal end of the strut being arranged to follow a loop.
- 4) A cutting tool as claimed in Claim 3, wherein the strut is arranged to pivot in a vertical plane.
- 5) A cutting tool as claimed in Claim 3 or Claim 4, wherein a lug at the distal end of the strut slidably locates within a looped recess.
- 6) A cutting tool as claimed in Claim 5, wherein the recess comprises a guide-channel which extends substantially perpendicularly to the axis of the longitudinal axis of the strut and within which the lug prevents substantial axial

movement of the strut.

7) A cutting tool as claimed in Claim 6, arranged such that as the trigger is displaced from said first position to said second position, the strut is displaced such that lug  
5 slides out of one end of the channel.

8) A cutting tool as claimed in any preceding claim, wherein the locking mechanism is arranged such that the guard member cannot be released from said safety position unless the tool is in contact with the workpiece.

10 9) A cutting tool as claimed in any preceding claim, wherein the blade is provided in a replaceable cartridge.

10) A cutting tool having a blade and a sliding blade-carriage formed with an elongate projection which extends substantially perpendicularly through a slot formed in the  
15 blade, the projection being rotatable about an axis parallel to its longitudinal axis and the slot being of substantially the same diameter as the projection and extending substantially perpendicularly to the axis of movement of the carriage, so that as the projection is rotated, the blade is correspondingly  
20 advanced or withdrawn relative to the carriage.

11) A cutting tool as claimed in Claim 10, wherein the blade is provided in a replaceable cartridge

12) A cutting tool as claimed in Claim 11, wherein the  
25 blade-carrier is mounted to the replaceable cartridge.

13) A cutting tool having a passageway for receiving a elongate blade formed with one or more lines of weakness defining successive blade sections, a portion of the tool being

displaceable to detach a distal section of the blade from the remainder of the blade such that the detached blade section is retained within a containment region of the tool.

14) A cutting tool as claimed in Claim 13, wherein the  
5 displaceable portion comprises a portion of the passageway formed by opposed first and second walls pivotally mounted such that they may be displaced to one side of the passageway to allow an end section of the blade to be introduced into the gap thus formed, and then brought back into line with the  
10 passageway to detach the end section from the remainder of the blade.

15) A cutting tool as claimed in Claim 14, wherein the portion of the passageway formed by the first and second walls is arranged to pivot away from the passageway about the forward  
15 edge of the portion.

16) A cutting tool as claimed in any of Claims 13 to 15, wherein the detached end section of the blade is pressed through an opening into the containment region.

17) A cutting tool as claimed in any of Claims 13 to 16,  
20 wherein the passageway is provided in a replaceable blade-cartridge.

18) A cutting tool as claimed in Claim 17, wherein the replaceable blade cartridge also provides the containment region for receiving detached blade sections.

25 19) A cutting tool as claimed in any of Claims 13 to 18, wherein the tool or, where the tool comprises a replaceable blade-cartridge, the blade-cartridge, is formed from a blank comprising three collinear elongate portions arranged to be

folded together along their adjoining edges such that the passageway for receiving an elongate blade is formed between the opposed faces of two adjacent portions of the blank, and the containment region is formed between the opposed faces of one of the two adjacent portions and a face of the remaining portion.

20) A cutting tool as claimed in Claim 19, wherein the blank is arranged for two adjacent portions of the blank to be folded together, to form the passageway between their opposed faces, and for the portions on opposite sides of the blank to then be folded together, to form the containment region between their opposed faces.

21) A cutting tool as claimed in Claim 19 or Claim 20, wherein the blank is formed from a plastics material having fold lines formed by compressed regions of the blank.

22) A cutting tool as claimed in any of Claims 19 to 21, wherein the opposed faces of the two portions which form the containment region are each formed with a plurality of projections for inhibiting movement of detached blade sections within the containment region.

23) A cutting tool comprising a replaceable blade-cartridge within which a blade is carried such that the blade may be slid from an exposed position to a retracted position and comprising means for preventing the cartridge from being removed from the tool whilst the blade is in its exposed position and means which lock the blade in its retracted position as the cartridge is removed from the tool.

24) A cutting tool as claimed in Claim 23, comprising a blade-carrier and wherein the means for preventing the

cartridge from being removed from the tool whilst the blade is in its exposed position comprise a pivoting catch having a first portion which engages a part of the tool body when the blade is in its exposed position, and a second portion which  
5 is displaced by the blade-carrier when the blade is in its retracted position to disengage the first portion from said part of the tool body.

25) A cutting tool as claimed in Claim 23, comprising a blade-carrier and wherein the means which lock the blade in its  
10 retracted position as the cartridge is removed from the tool comprise a pivoting catch having a first portion which engages the blade-carrier when the blade is in its retracted position and the cartridge is outside of the tool, and a second portion which is displaced by a part of the tool body when the blade  
15 is inserted into the tool to disengage the first portion from the blade-carrier.

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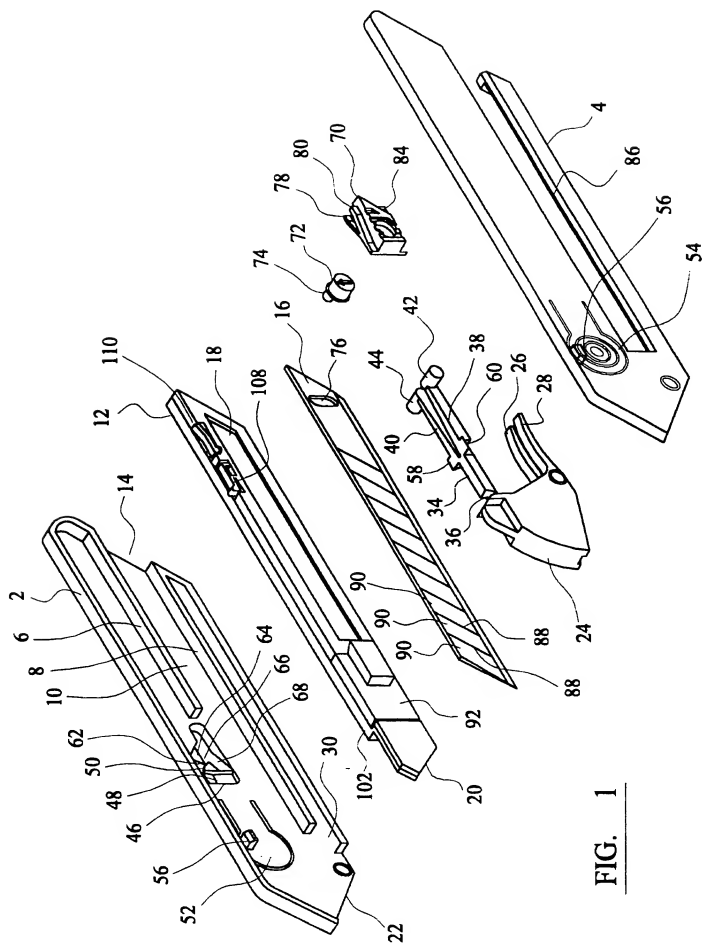
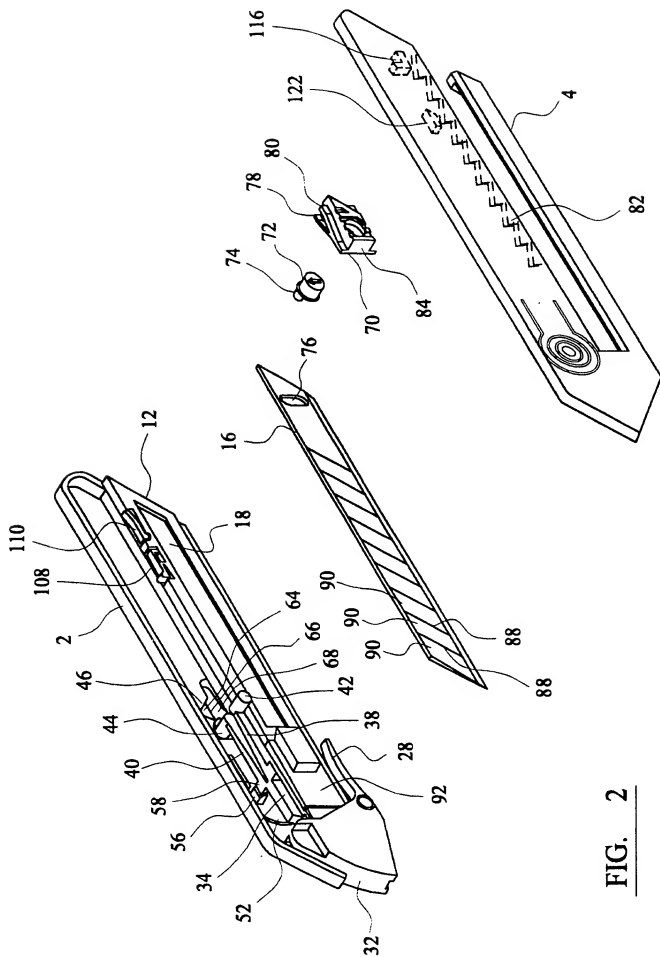


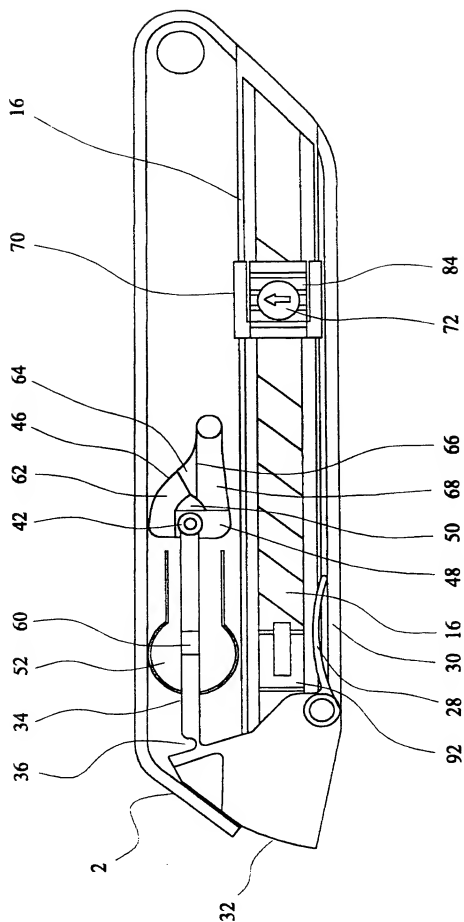
FIG. 1



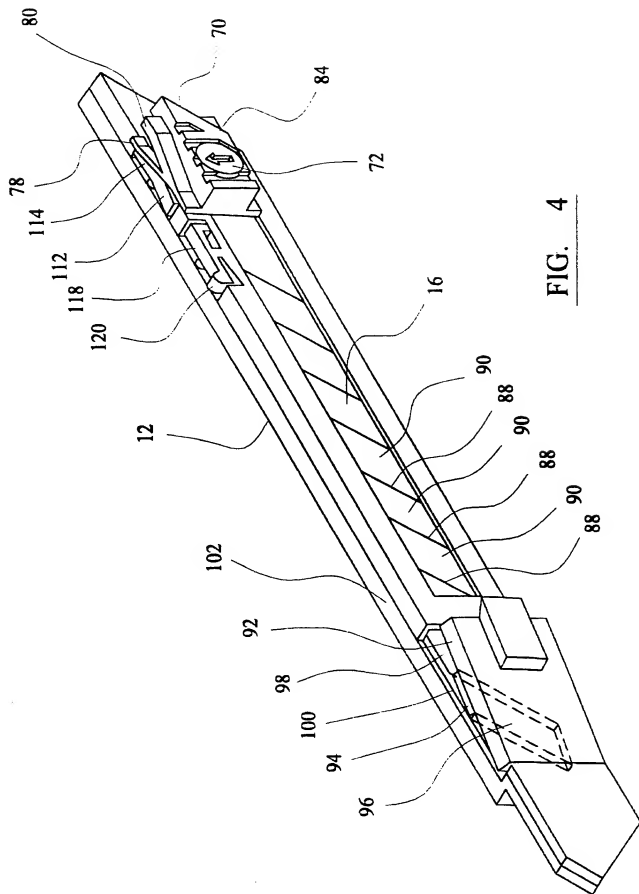
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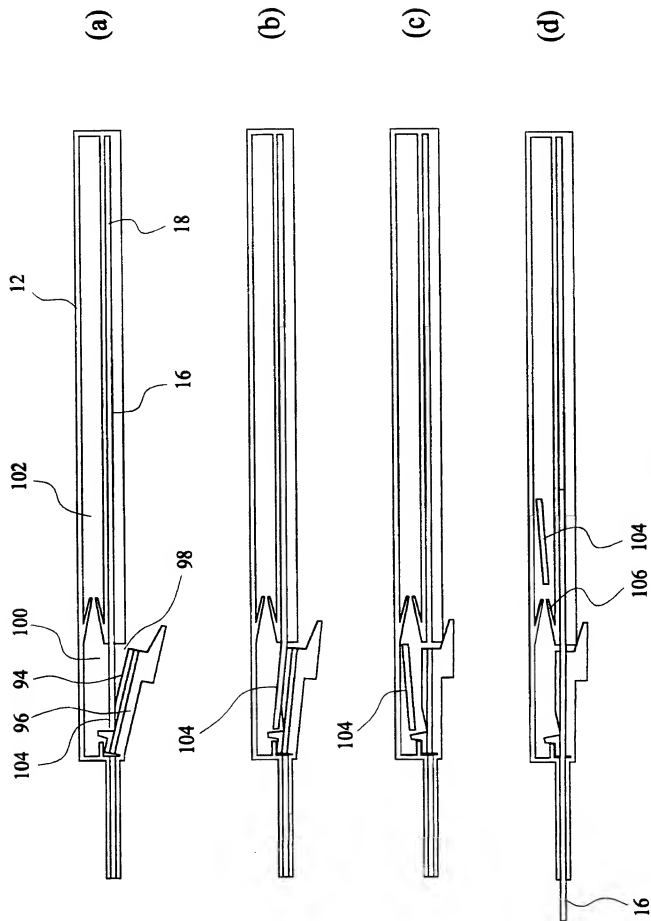
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FIG. 3

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**FIG. 5**

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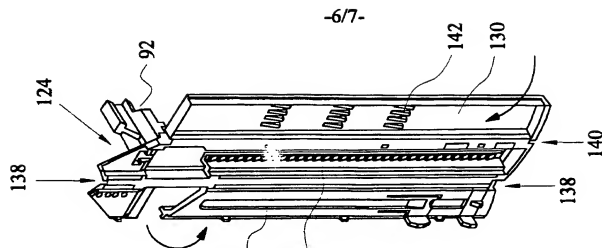


FIG. 9

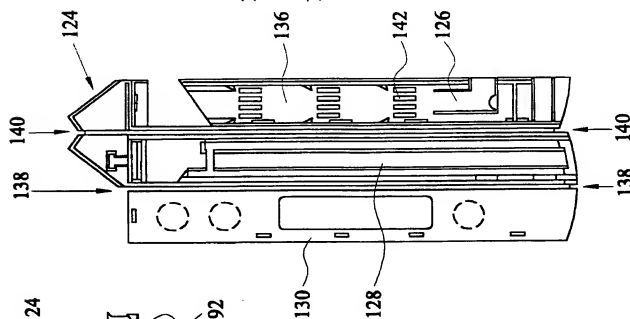


FIG. 8

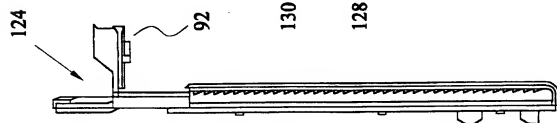


FIG. 7

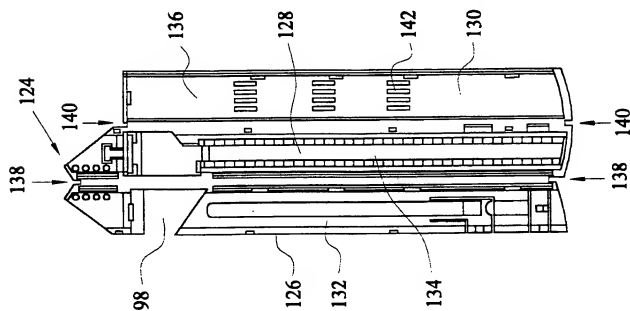
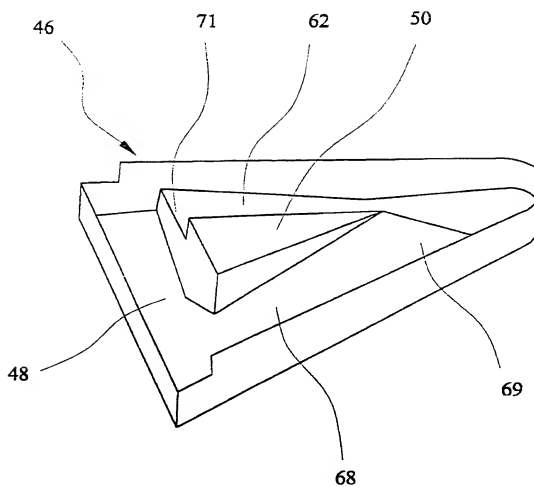


FIG. 6

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FIG. 10